

## 2006 IMC Code Review Worksheet • Code Change Cycle 2006

### Existing Amendments

	2003 Code Section	2006 Code Section	Title or Subject	Comments	TAG Recommendation	Committee Action
<b>International Mechanical Code (IMC)</b>						
1	101.2	Same	Scope	Specifies that NFPA 54 and 58 are to be used for LP gas installations per RCW 19.27.031 Exception allowing the use of the IEBC was removed in the 2006 Edition	<b>Retain</b> (modify to use 2006 language). <b><u>Also add this amendment into the IFGC and IRC.</u></b>	
<p><b>101.2 Scope.</b> This code shall regulate the design, installation, maintenance, alteration and inspection of mechanical systems that are permanently installed and utilized to provide control of environmental conditions and related processes within buildings. This code shall also regulate those mechanical systems, system components, equipment and appliances specifically addressed herein. The installation of fuel gas distribution piping and equipment, fuel gas-fired appliances and fuel gas-fired appliance venting systems shall be regulated by the <i>International Fuel Gas Code</i>.</p> <p><b>Exceptions:</b></p> <ol style="list-style-type: none"> <li>1. Detached one- and two-family dwellings and multiple single-family dwellings (townhouses) not more than three stories high with separate means of egress and their accessory structures shall comply with the International Residential Code.</li> <li>2. <del>Mechanical systems in existing buildings undergoing repair, alterations, or additions, and change of occupancy shall be permitted to comply with the International Existing Buildings Code.</del></li> <li>3. <del>The standards for liquefied petroleum gas installations shall be the 2001 edition of NFPA 58 (Liquefied Petroleum Gas Code) and the 2002 Edition of ANSI Z223.1/NFPA 54 (National Fuel Gas Code).</del></li> </ol>						
2	101.5	Same	Other authorities	Notes that the Utilities and Transportation Commission has regulations regarding gas piping that may apply	<b>Delete.</b>	
<del><b>101.5 Other authorities.</b> In addition to the International Mechanical Code, provisions of WAC 480-93 regarding gas pipeline safety may also apply to single meter installations serving more than one building. The provisions of WAC 480-93 are enforced by the Washington Utilities and Transportation Commission.</del>						
3	202	Same	Unusually tight construction	Specifies that buildings constructed under the WSEC are considered "unusually tight"	<b>Retain.</b>	
<p><b>UNUSUALLY TIGHT CONSTRUCTION.</b> Construction meeting the following requirements:</p> <ol style="list-style-type: none"> <li>1. Walls exposed to the <del>outside</del> outdoor atmosphere having a continuous water vapor retarder with a rating of one perm or less with openings gasketed or sealed; and</li> <li>2. Openable windows and doors meeting the air leakage requirements of the International Energy Conservation Code, Section 502.1.4; and</li> <li>3. Caulking or sealants are applied to areas such as joints around window and door frames, between sole plates and floors, between wall-ceiling joints, between wall panels, at penetrations for plumbing, electrical, and gas lines, and at other openings; or</li> <li>4. <del>Buildings built in compliance with the 1986 or later editions of the Washington State Energy Code, WAC 51-11, Northwest Energy Code, or Super Good Cents weatherization standards or equivalent.</del></li> </ol>						

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4	401.5.2	401.4.2	Exhaust openings	Specified exhaust openings must comply with specific requirements in chapter 5.	<b>Retain and renumber.</b>	
<b>401.4.2401.5.2 Exhaust openings.</b> Outdoor exhaust openings shall be located <del>so as not to create a nuisance</del> in accordance with Chapter 5. Exhaust air shall not be directed onto walkways.						
5	403.3	Same	Ventilation rate	Adds exception for reduction when occupant density is known and documented to coordinate with VIAQ.	<b>Retain.</b>	
<p><b>403.3 Ventilation rate.</b> Ventilation systems shall be designed to have the capacity to supply the minimum outdoor airflow rate determined in accordance with Table 403.3 based on the occupancy of the space and the occupant load or other parameter as stated therein. The occupant load utilized for design of the ventilation system shall not be less than the number determined from the estimated maximum occupant load rate indicated in Table 403.3. Ventilation rates for occupancies not represented in Table 403.3 shall be determined by an approved engineering analysis. The ventilation system shall be designed to supply the required rate of ventilation air continuously during the period the building is occupied, except as otherwise stated in other provisions of the code.</p> <p><b>Exception:</b> <del>The occupant load is not required to be determined, based on the estimated maximum occupant load rate indicated in Table 403.3, where approved statistical data document the accuracy of an alternate anticipated occupant density. Where occupancy density is known and documented in the plans, the outside air rate may be based on the design occupant density. Under no circumstance shall the occupancies used result in outside air less than one-half that resulting from application of Table 403.3 estimated maximum occupancy rates.</del></p>						
6	501.5	Same	Termination point/ Exhaust outlet	Specifies minimum distances for exhaust openings. Most of the state amendment is present in the 2006 Edition, except for the exceptions to item 3.	<b>Modify.</b> (Retain exceptions)	
<p><b>501.2.1 Location of exhaust outlets.</b> The termination point of exhaust outlets and ducts discharging to the outdoors shall be located with the following minimum distances: <del><b>501.5 Termination point/exhaust outlet.</b> The termination point or exhaust outlet for exhaust ducts discharging to the atmosphere shall be located with the following minimum distances:</del></p> <ol style="list-style-type: none"> <li>For ducts conveying explosive or flammable vapors, fumes or dusts: 30 feet from property line; 10 feet from operable openings into buildings; 6 feet from exterior walls and roofs; 30 feet from combustible walls and operable openings into buildings which are in the direction of the exhaust discharge; 10 feet above adjoining grade.</li> <li><del>For ducts conveying explosive or flammable vapors, fumes or dusts: 30 feet (9144 mm) from the property line; 10 feet (3048 mm) from openings into the building; 6 feet (1829 mm) from exterior walls and roofs; 30 feet (9144 mm) from combustible walls and openings into the building which are in the direction of the exhaust discharge; 10 feet (3048 mm) above adjoining grade.</del></li> <li>For other product-conveying outlets: 10 feet from the property lines; 3 feet from exterior walls and roofs; 10 feet from operable openings into buildings; 10 feet above adjoining grade.</li> <li><del>For other product-conveying outlets: 10 feet (3048 mm) from the property line; 3 feet (914 mm) from exterior walls and roofs; 10 feet (3048 mm) from openings into the building; 10 feet (3048 mm) above adjoining grade.</del></li> <li>For environmental air duct exhaust: 3 feet from property lines; 3 feet from operable openings into buildings for all occupancies other than Group U, and 10 feet from mechanical air intakes.</li> <li><del>For environmental air duct exhaust: 3 feet (914 mm) from the property line, 3 feet (914 mm) from openings into the building for all occupancies other than Group U, and 10 feet (3048 mm) from a mechanical air intake. This includes environmental air regulated by Sections 504 and 505, but does not include enclosed parking garage exhaust outlets regulated by Section 404.</del></li> </ol>						

<b>Exceptions:</b> <ol style="list-style-type: none"> <li>1. The separation between an air intake and exhaust outlet on a single listed package HVAC unit.</li> <li>2. Exhaust from environmental air systems other than garages may be discharged into an open parking garage.</li> <li>3. Except for I occupancies, where ventilation system design circumstances require building HVAC air to be relieved, such as during economizer operation, such air may be relieved into an open or enclosed parking garage within the same building.</li> <li>4. For specific systems: For clothes dryer exhaust, see Section 504.4; for kitchen hoods, see Section 506.3; and for subslab soil exhaust systems, see Section 512.4.</li> </ol>						
7	601.2	Same	Air movement in egress elements	Adds exceptions allowing the use of corridors as air ducts. Remove exception 5 as it conflicts with IBC requirements and other agency requirements for hospitals	Modify.	
<b>601.2 Air movement in egress elements.</b> Corridors shall not serve as supply, return, exhaust, relief or ventilation air ducts. <b>Exceptions:</b> <ol style="list-style-type: none"> <li>1. Use of a corridor as a source of makeup air for exhaust systems in rooms that open directly onto such corridors, including toilet rooms, bathrooms, dressing rooms, smoking lounges and janitor closets, shall be permitted provided that each such corridor is directly supplied with outdoor air at a rate greater than the rate of makeup air taken from the corridor.</li> <li>2. Where located within a dwelling unit, the use of corridors for conveying return air shall not be prohibited.</li> <li>3. Where located within tenant spaces of 1,000 square feet (93 m<sup>2</sup>) or less in area, utilization of corridors for conveying return air is permitted.</li> <li>4. Where such air is part of an engineered smoke control system.</li> <li>5. <del>Corridors conforming to the International Building Code in Group I occupancies.</del></li> <li>6. Corridors serving residential occupancies shall be permitted to be supplied without specific mechanical exhaust subject to the following: <ol style="list-style-type: none"> <li>6.1 The supply air is 100% outside air, and</li> <li>6.2 The units served by the corridor have conforming ventilation independent of the air supplied to the corridor, and</li> <li>6.3 For other than high-rise buildings, the supply fan will automatically shut off upon activation of corridor smoke detectors which shall be spaced at no more than 30 feet (9144 mm) on center along the corridor, or</li> <li>6.4 For high-rise buildings, corridor smoke detector activation will close required smoke/fire dampers at the supply inlet to the corridor at the floor receiving the alarm.</li> </ol> </li> </ol>						
8	601.3	601.4	Contamination protection	Provisions to allow exhaust ducts to pass through ducts or plenums. The TAG felt very strongly this was a bad design element.	Delete.	
<del><b>601.3 Contamination Prevention.</b> Exhaust ducts under positive pressure, chimneys, and vents shall not extend into or pass through ducts or plenums.  <b>Exception:</b> Exhaust ducts conveying environmental air shall be permitted to pass through a duct or plenum provided that:</del> <ol style="list-style-type: none"> <li>1. The duct is maintained under sufficient negative pressure to prevent leakage of the exhaust air to the surrounding duct or plenum; or</li> <li>2. If maintained under a positive pressure with respect to the surrounding duct or plenum, the exhaust duct will be sealed to prevent leakage; or</li> <li>3. The surrounding air stream is an exhaust air stream not intended for recirculation to the building and cross contamination of the two air streams will not create a hazardous condition.</li> </ol>						
9	1003-1011	Same	Boilers and pressure vessels	Directs users to L&I's WAC regulating boilers and pressure vessels	Modify.	
<b>Sections 1003 through 1011 are not adopted.</b> Pressure Vessels and Boilers are regulated by Chapter 70.79 RCW.						

International Fuel Gas Code (IFGC)						
2003		2006				
10	404.8	Same	Protection against corrosion	Requires cathodic protection of metallic gas piping for consistency with UTC regulations. Also proposals 06-057 and 06-058. The TAG agreed with the proponent that the NACE requirements applied to pipelines and not the smaller supply lines, and was not being enforced and inspected by local jurisdictions.	Delete.	
<b>404.8 Protection against corrosion.</b> Metallic pipe or tubing exposed to corrosive action, such as soil condition or moisture, shall be protected in an approved manner, <u>and cathodically protected in accordance with NACE RP-01-69</u> . Zinc coatings (galvanizing) shall not be deemed adequate protection for gas piping underground. Ferrous metal exposed in exterior locations shall be protected from corrosion in a manner satisfactory to the code official. Where dissimilar metals are joined underground, an insulation coupling or fitting shall be used. Piping shall not be laid in contact with cinders.						
National Fuel Gas Code (NFPA 54)						
2002		2005				
11	6.3.1		Protection against corrosion	(See above)	Delete.	
<b>6.1.3 Protection Against Corrosion.</b> Metallic gas piping in contact with earth or other material that could corrode the piping shall be protected against corrosion in an approved manner, <u>and cathodically protected in accordance with NACE RP-01-69</u> . When dissimilar metals are joined underground, an insulating coupling or fitting shall be used. Piping shall not be laid in contact with cinders. Uncoated threaded or socket welded joints shall not be used in piping in contact with soil or where internal or external crevice corrosion is known to occur.						

## New Amendments Recommended for IMC

2006 Code Section	Title or Subject	Comments	TAG Recommendation	Committee Action
403.2.1	Recirculation of air	Allowance of recirculated exhaust is not appropriate and is in conflict with Section 501.2. The change adopted in the 2006 IMC does not accomplish what the rationale states the intent was—to remove a barrier to heat recovery systems—as heat recovery systems do not recirculate exhaust. This change also affects Table 403.3.	<b>Delete item 4.</b>	
<p><b>403.2.1 Recirculation of air.</b> The air required by Section 403.3 shall not be recirculated. Air in excess of that required by Section 403.3 shall not be prohibited from being recirculated as a component of supply air to building spaces, except that:</p> <ol style="list-style-type: none"> <li>1. Ventilation air shall not be recirculated from one dwelling to another or to dissimilar occupancies.</li> <li>2. Supply air to a swimming pool and associated deck areas shall not be recirculated unless such air is dehumidified to maintain the relative humidity of the area at 60 percent or less. Air from this area shall not be recirculated to other spaces where 10 percent or more of the resulting supply airstream consists of air recirculated from these spaces.</li> <li>3. Where mechanical exhaust is required by Note b in Table 403.3, recirculation of air from such spaces shall be prohibited. All air supplied to such spaces shall be exhausted, including any air in excess of that required by Table 403.3.</li> <li>4. <del>Where mechanical exhaust is required by Note h in Table 403.3, mechanical exhaust is required and recirculation is prohibited where 10 percent or more of the resulting supply airstream consists of air recirculated from these spaces.</del></li> </ol>				
Table 403.3	Required outdoor ventilation air	(See above)	<b>Delete footnote h and all references to footnote h</b>	
<p>Table 403.3, Footnote h. <del>Mechanical exhaust is required and recirculation is prohibited except that recirculation shall be permitted where the resulting supply airstream consists of not more than 10 percent air recirculated from these spaces (see Section 403.2.1, Items 2 and 4).</del> <u>Reserved</u></p>				
501.2	Exhaust discharge	The TAG felt the language in exception 1 was too easily confused with the requirement in the VIAQ for a whole-house ventilation system and recommends the language be modified for clarification--to differentiate between an environmental comfort fan and a whole-house ventilation fan	<b>Modify Exception 1</b>	
<p><b>501.2 Exhaust discharge.</b> The air removed by every mechanical exhaust system shall be discharged outdoors at a point where it will not cause a nuisance and not less than the distances specified in Section 501.2.1. The air shall be discharged to a location from which it cannot again be readily drawn in by a ventilating system. Air shall not be exhausted into an attic or crawlspace.</p> <p><b>Exceptions:</b></p> <ol style="list-style-type: none"> <li>1. Whole-house <del>ventilation type-cooling</del> attic fans shall be permitted to discharge into the attic space of dwelling units having private attics.</li> <li>2. Commercial cooking recirculating systems.</li> </ol>				